

PATENT SPECIFICATION

923,205

DRAWINGS ATTACHED.



Date of Application and filing Complete Specification :
Feb. 3. 1960. No. 3853160.

Application made in Australia (No. 45691) on Feb. 6, 1959.

Complete Specification Published : April 10, 1963.

Index at Acceptance :—Classes 20(3), P4A(1A : 2 : 5 : 6B : 10 : 12 : 13); and 42(2), F.

International Classification :—A47h (F06c).

COMPLETE SPECIFICATION.

Roller Blind for Curved Windows.

I, STANLEY PEARSON WINN, of 21 Lochness Road, Torrens Park, State of South Australia, Commonwealth of Australia, a British Subject, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a roller blind for curved windows and in particular it relates to a roller blind of a type which would be suitable for shading the upper portion of a curved wind-shield of a motor vehicle.

It is known to prevent glare in motor vehicles by the use of accessories which are commonly known as "sun vizors", these being fitted to the outer portion of a vehicle above the windshield. However, these are usually of a fixed nature and are not adaptable to the varying conditions under which the vehicle is driven. They interfere with the streamlining of a vehicle, and sometimes give rise to wind noise.

It is the main object of this invention to disclose a means whereby a roller blind may be used for the purpose of shading around a curved wind-shield, and if desired for some distance back at both ends of the wind-shield. One of the major problems associated with attempting to operate a roller blind around a curve is that there tends to be excessive lost motion between one end of the operating roller and the other, whether the operating roller is made from a plurality of contiguous parts or a single flexible member.

According to the present invention, there is provided a roller blind for curved windows characterised by a curved shaft, a plurality of rollers rotatably supported end to end on said shaft, said rollers having a tongue on one end and a slot in the other

end, the tongues engaging the mouths of slots of adjacent rollers, a blind of flexible sheet material engaging said rollers and means to rotate said rollers whereby said blind may alternatively be raised or lowered.

For the invention to be more clearly understood, it will be described in some detail with reference to an embodiment which is illustrated in the accompanying drawings, in which:—

Figure 1 is a sectioned perspective view showing a blind in the partly drawn position;

Figure 2 is a perspective view of a flexible sheet material after sewing;

Figure 3 is a perspective view of interconnected rollers;

Figure 4 is a partly sectioned view of one end of the blind;

Figure 5 shows an alternative elevating device; and

Figure 6 shows a further alternative elevating device.

According to the embodiment described with reference to Figures 1, 2, 3 and 4, a shaft 1 of about one-quarter inch diameter steel is shaped to the shape of the blind and set into a position from which the blind may be suspended. The material 2 for the blind 3 is of a flexible nature, and I have found that a very suitable material is a pre-shrunk knitted nylon coated with Polyvinyl chloride, such a material possessing the desired life characteristics and the desired flexibility. Alternatively, polyester fibre material may be substituted for the nylon material, and similarly coated with Polyvinyl chloride.

A series of rollers is fed on to the curved shaft 1, the ends of each of the rollers 5 being shaped so that they interlock directly with the adjacent rollers. These rollers 5 are

[Price 4s. 6d.]

arranged with a central hole 6 somewhat larger in diameter than the shaft 1 to accommodate any curvature in the shaft 1. One end of each roller 5 is provided with a diametrically extending slot 7 with a narrow mouth 8, but widening towards the base 9 of the slot 7, while the other end of the roller 5 is provided with parallel sided tongues 10, the widths of which are slightly greater than the width of the mouth 8 of the slot 7 so that when one roller is placed into engagement with an adjacent roller, there is an interference fit which is accommodated by the resilience of the roller itself, the roller being made from high density polyethylene or polystyrene. Since the fit is an interference fit, it will be seen that any movement at all which is imparted to one roller to cause it to rotate will correspondingly rotate the next adjacent roller, and since the outwardly projecting tongue has parallel sides, it will be seen that the rollers may rotate about intersecting axes.

Figure 2 illustrates a sheet of material 2 for the blind 3 after sewing, and occupying the same shape as when fitted to the vehicle. The upper edge 15 of the material 2 is folded over and sewn along the seam 16, the seam 16 being of the shape shown in Figure 2 to prevent uneven "bunching" as the blind is raised. The lower edge 17 is similarly folded and sewn along the seam 18. The upper edge 15 is fixed to the rollers 5 by means of cement, and is prevented from slipping intermediate its ends by means of the projections 20 on the rollers 5. The ends of the lower edge 17 engage over pins 21 on blocks 22, and eyelets 23 engage projections 24 to firmly secure the blind 3 (see Figure 4).

Each of the two end rollers 5 interengages a cylindrical member 26 fitted with a steel tape 27 rolled around it, the tapes 27 each being arranged to have a camber for the purpose of rigidity when extended, the free ends 28 of the steel tapes 27 being secured to the blocks 22.

These tapes greatly stabilise the blind against movement towards the driver or sideways movement as a vehicle travels round a corner. The blind 3 may be raised or lowered in any of a number of ways. According to this embodiment, a cord 30 is engaged around a drum 31, the drum 31 being provided with a series of notches (not shown) adapted to releasably engage a snubbing member 32 which is urged by means of a compression spring 33 into the notches. By operating either end of the cord 30 (which may be continuous or in two parts as shown in the drawings), the blind is alternatively raised or lowered.

A method alternative to the above embodiment which may be used to raise and lower the blind is shown in Figure 5, where

a handle 35 is coupled by a belt 36 to a bevel pinion 37 which engages a bevel gear 38, the arrangement otherwise being similar to that of Figure 4. A still further variation is illustrated in Figure 6, where a saddle 38 slides on runners 39 and 40, and in so sliding rotates the spiral shaft 41 which transmits a drive to rollers 5 by the spur wheels 42. No snubbing device is necessary when this arrangement is used.

Brackets 44 are adapted for securing to the roof rails of a vehicle, and these carry the ends of the shaft 1. Inside the brackets 44 are secured guide members 45 which guide the tapes 27 on the cylindrical members 26.

WHAT I CLAIM IS:—

1. A roller blind for curved windows characterised by a curved shaft, a plurality of rollers rotatably supported end to end on said shaft, said rollers having a tongue on one end and a slot in the other end, the tongues engaging the mouths of slots of adjacent rollers, a blind of flexible sheet material engaging said rollers and means to rotate said rollers whereby said blind may alternatively be raised or lowered.

2. A roller blind for curved windows according to Claim 1 further characterised by each said slot being tapered to be wider at the base than at the mouth, the width of each said mouth being less than the thickness of each said tongue whereby an interference fit exists therebetween.

3. A roller blind for curved windows according to any one of the preceding claims further characterised by flexible steel tapes secured at their lower ends to the lower edge of said blind and involutely secured at their upper ends to cylindrical members coupled to said rollers.

4. A roller blind for curved windows according to any preceding claim further characterized by means to raise and lower the blind comprising a cord wound on a drum and means interconnecting the drive from said drum to said rollers.

5. A roller blind for curved windows according to any one of Claims 1 to 3 further characterised by means to raise and lower the blind comprising a cranked handle, drive means between the said handle and a bevel pinion, and a bevel gear in engagement with said bevel pinion, said bevel gear being coupled to said rollers.

6. A roller blind for curved windows according to any preceding claim, further characterised by spring loaded snubbing means to prevent free rotation of said rollers.

7. A roller blind for curved windows according to any one of Claims 1 to 3 where the means to raise and lower the blind com-

prises a slidable saddle and a spiral shaft coupled to said rollers, said saddle engaging said shaft whereby said rollers are rotationally driven upon sliding said saddle.

8. A roller blind for curved windows constructed substantially according to the embodiment described in the Specification

with reference to Figures 1, 2, 3 and 4 of the drawings.

HASELTINE, LAKE & CO.,
28 Southampton Buildings,
Chancery Lane, London, W.C.2,
Agents for the Applicant.

Abingdon : Printed for Her Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1963.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2,
from which copies may be obtained.

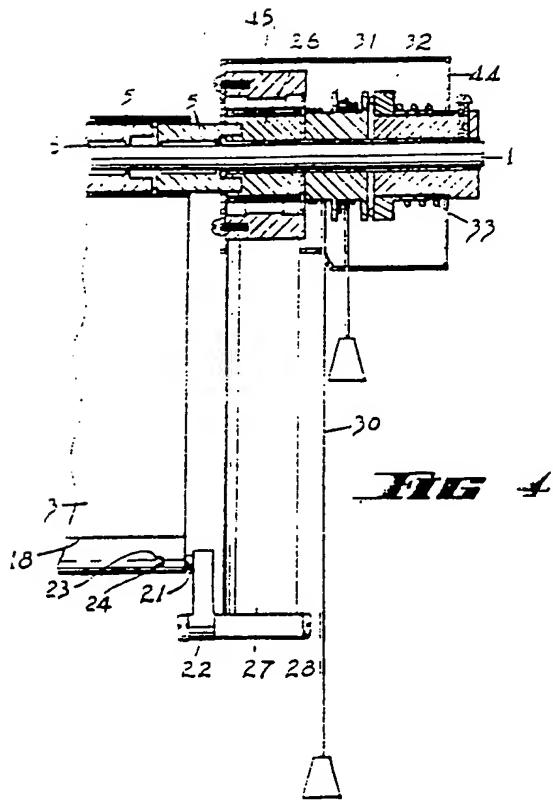


FIG. 4

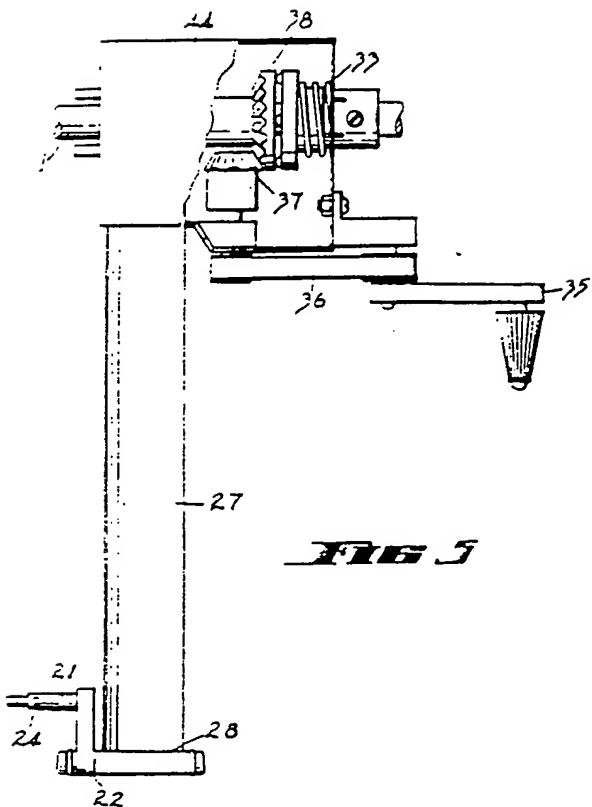


FIG. 5

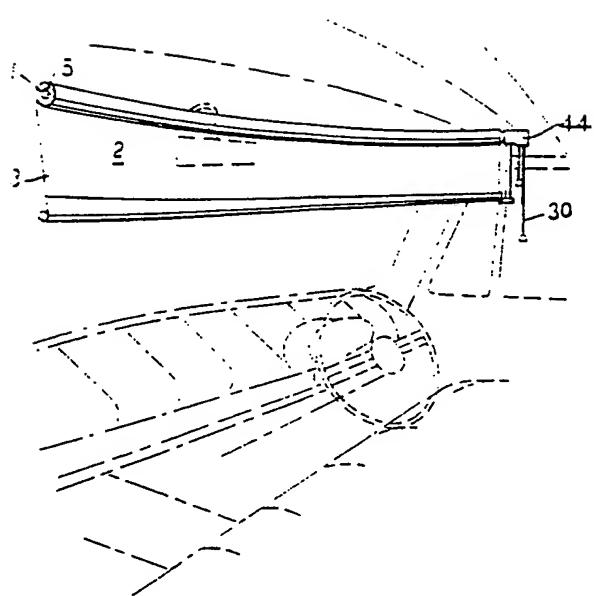


FIG 1

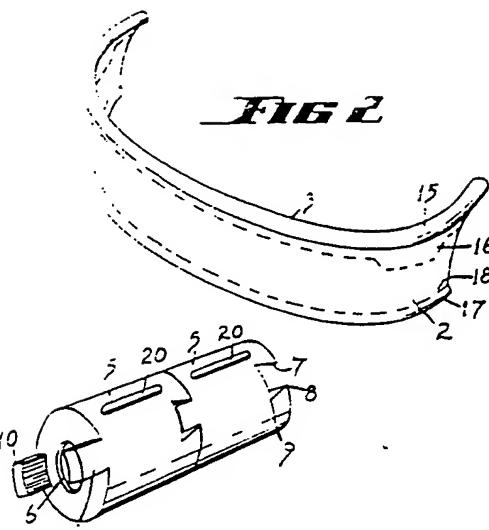


FIG 2

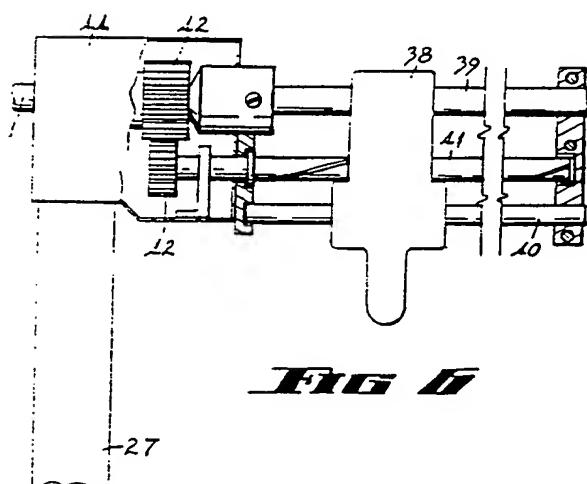


FIG 3

FIG 5